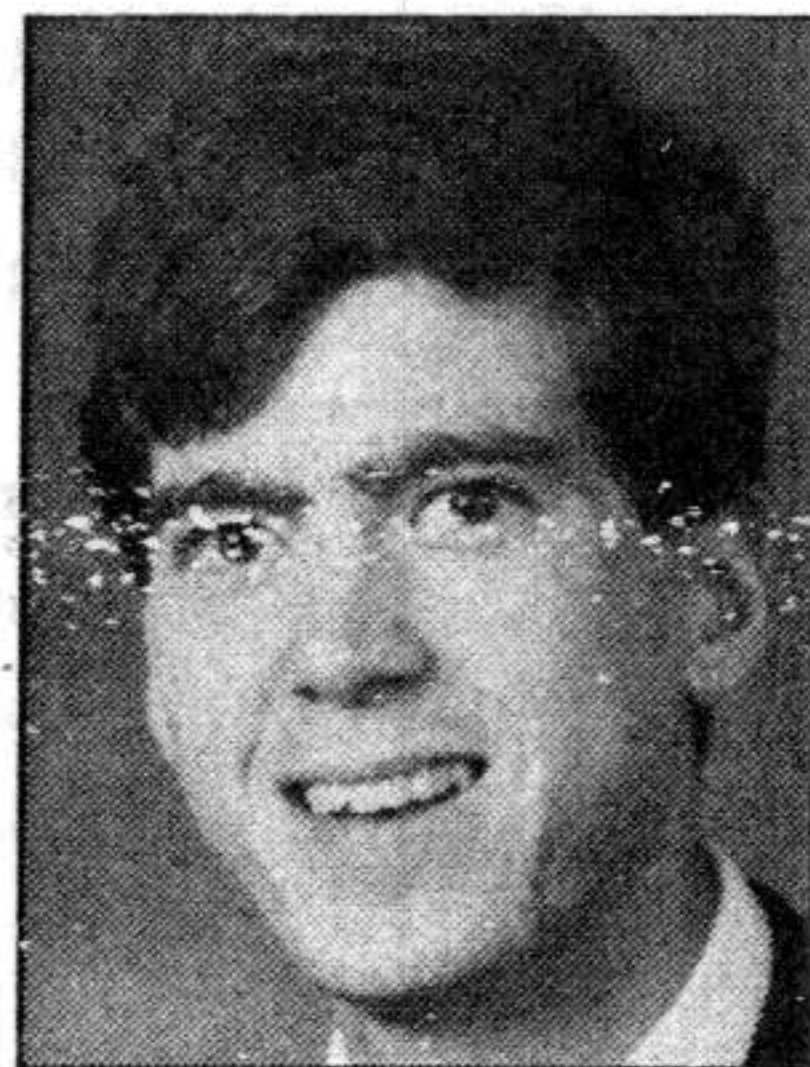
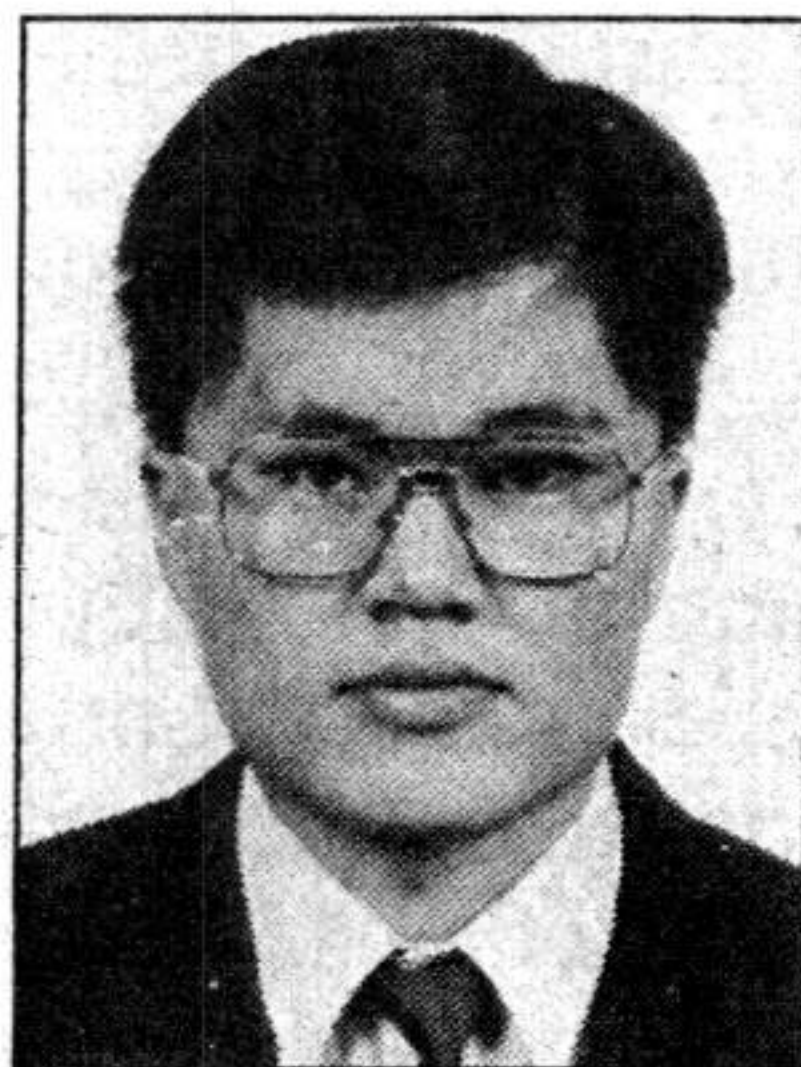




T. M. Olszewski



C. A. Baldwin



J. Y. Pahng

My year of graduate study could be characterized as an academic balancing act. In the fall I took three courses, which left little time to begin research for my thesis. This semester, I've been kept busy by the demands of two classes, serving on the dean's search committee for our engineering and computer science school, grading, and doing preliminary work for my thesis, as well as remaining active in the Michigan Theta Chapter.

I look forward to the spring and summer semester, when the bulk of my coursework will be complete and I can devote more time to my thesis. Thus far, I have worked on simulation and animation of a Stewart platform. This summer, I will work on control of the platform.

After graduation, I hope to obtain a challenging position in industry and begin doctoral studies on a part-time basis. My ultimate goal remains to pursue a research career in industry or academe. Thanks again to Tau Beta Pi, 3M, and everyone who has helped me realize my dreams. I am honored to be a Tau Beta Pi Fellow.

Christopher A. Baldwin, KS Γ '92
Sigma Tau Fellow No. 19

With the help of the Tau Beta Pi Fellowship, I have just completed my first year of graduate study in chemical engineering at the University of Cambridge in England. It would be hard to say whether I've learned more technically or culturally in the last year. In terms of my research interests, I have been investigating applying nuclear magnetic resonance imaging (MRI) to ground-water contamination treatment methods, including pump-and-treat and bioremediation. Designing laboratory scale experiments that have meaning when applied to field work is tricky, but physical constraints imposed by MRI compound the problem. The potential of MRI to non-intrusively resolve, in two or three dimensions, saturation of nonaqueous-phase liquids, contaminant concentrations, and aqueous flow rates makes it well worth the effort. I have spent the year learning MRI and surveying MRI and ground-water contamination literature.

I intend to complete my Ph.D. here and return to the U.S. to make practical application of my work in a field setting either as a consultant in the private sector or at a national laboratory.

Jason Y. Pahng, IL Γ '92
Stark Fellow No. 15

I am studying toward a master's degree in mechanical engineering at MIT. It is hard to believe that I am already roughly halfway complete in working on my courses and research or that I have been living in Boston for seven months.

My graduate study this year has been good. I have enjoyed taking graduate courses, which can cover materials in more depth than the undergraduate courses. What I really enjoyed much more, however, is the research part of the graduate study. I have been working with three other graduate students on a project in the area of atomic resolution control and advanced data-storage devices. Through this challenging research, I have been learning much about doing research and working in teams.

After finishing my master's degree early next year, I want to work in industry. Although I am doing applied engineering research in my project, it is still academic. For next year, I want to do practical engineering work in an industry environment.

Stuart F. Oberman, IA B '92
Williams Fellow No. 13

At this time last year, I was planning my graduate study in electrical engineering at Stanford University using my Tau Beta Pi Fellowship. My thoughts were of palm trees, California sun-filled days, and weekend trips to the beach as I effortlessly pursued a master's degree in computer architecture. Well, I can report that this past year I have occasionally seen the sun and some palm trees as I travel between lectures, seminars, research group meetings, and various computer facilities. However, academic success here has come only with tremendous amounts of effort.

This has provided me with many rewards. I have gained a solid understanding in the areas of VLSI design, processor design, semiconductor physics, and parallel computer architecture. Additionally, I have been involved in research in the computer systems lab. I am currently implementing a CMOS floating-point divider that should be one of the fastest ever to be fabricated. In-between all of the academic rigor, I have found time to explore some of the excitement of the Bay area, including San Francisco and the Napa Valley. I have had a wonderful time here, and my experiences have far exceeded my expectations.

I hope to graduate in December with my M.S. and to continue work towards a Ph.D. in computer architecture. My long-term goal is to pass on some of my accumulated knowledge to others, and thus I am planning on a career in electrical engineering academe. I am extremely grateful for the assistance Tau Beta Pi has given me and am honored to have been chosen as a Fellow.

Kimberly A. Sands, VA Γ '92
Deuchler Fellow No. 13

I began my graduate studies in environmental engineering at North Carolina State University in January 1993. This spring, I am taking three courses and working on a research project, which involves evaluating ponds and wetlands for the protection of public water supplies. My research focuses on the pollutant removal efficiencies of a detention basin and a combination detention basin/wetland. These structures will be used to capture storm-water runoff and settle pollutants, as well as remove nutrients due to biological activity. I am researching regulations and design procedures for storm-water management structures.

This summer, I will measure the effectiveness of these structures in improving water quality by collecting samples during baseflow and storm events. These samples will be analyzed for various pollutants including: total dissolved solids, total suspended solids, alkalinity, total organic carbon, fecal coliform, nutrients, and various metals. After the monitoring is complete, I will develop a mechanistic model to predict pollutant removal efficiencies of each structure and to improve our understanding of pollutant removal mechanisms. After completing a master's degree, I would like to continue to research environmental issues for a private or public agency, such as the E.P.A. I feel that the field of environmental engineering will provide many challenging and educational experiences.

Firdaus Bhathena, MA B '92
Hughes Fellow No. 10

Most of my time this past year has been spent completing my master's thesis at MIT. My thesis project involved designing and implementing a controller for a novel friction-drive system in a medical-imaging laser printer. The goal was to provide

Claudia R. Johnson
Centennial Fellow No. 8

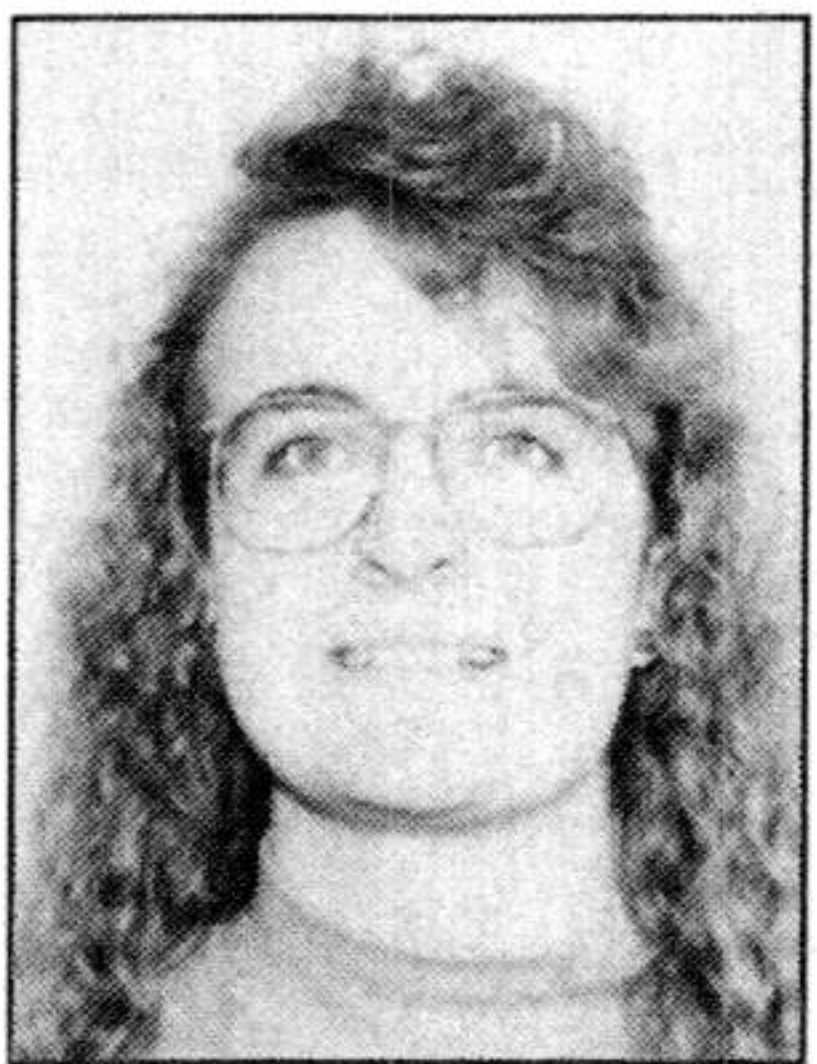
Scholastically at the top of her class at Cornell University and in the School of Civil and Environmental Engineering, Claudia has received an NSF award and will continue her studies at the University of California, Berkeley. Her goal is to some day design a structure as elegant and efficient as the Salginatobel Bridge in Switzerland. De-



signed by Robert Maillart in 1928, the bridge is a three-hinged arch of reinforced concrete which spans a mountain valley. So enthusiastic was she about this structure that she personally visited it last summer. While abroad, she took a course on Renaissance art and studied bridges designed by Christian Menn. Claudia plans to major in structural engineering for a minimum of two years before joining a design firm and/or working toward a doctorate. While an undergraduate she was active on the equestrian team, served as a tutor for the engineering minority office, and participated in the ASCE student chapter, where she was a member of the concrete canoe building and racing team. She was elected to Chi Epsilon and Tau Beta Pi's New York Delta Chapter.

Annette M. Brenner
Spencer Fellow No. 37

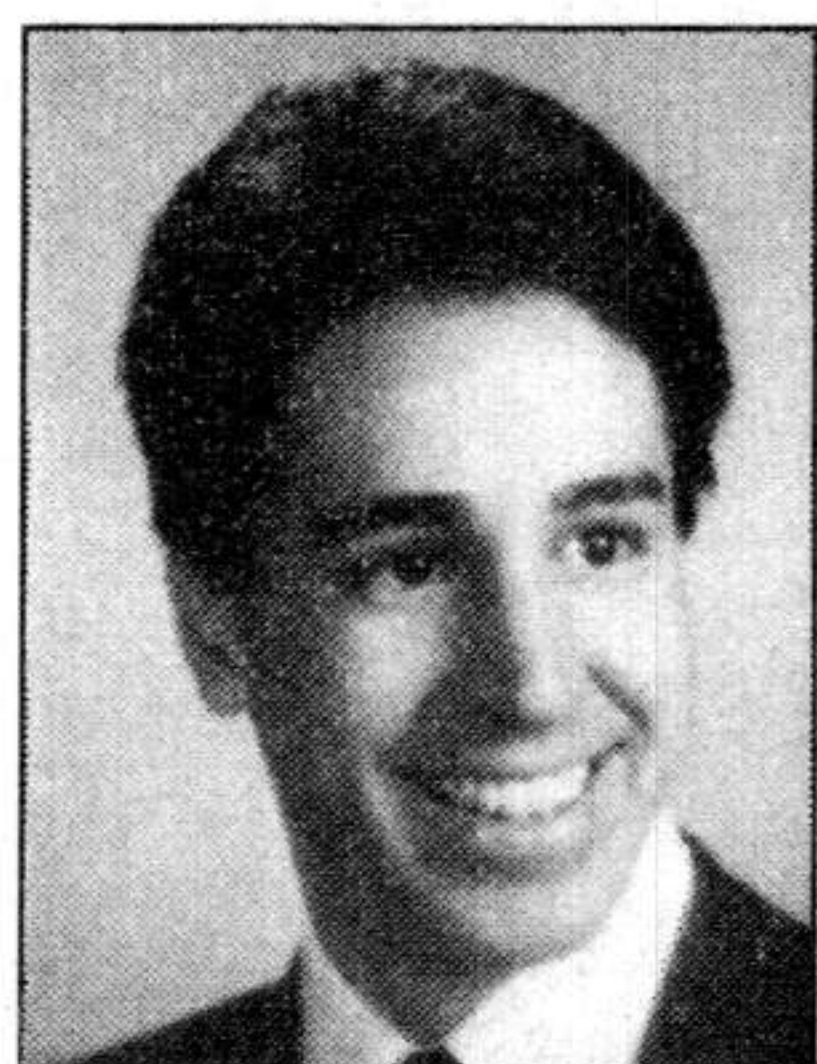
As president of Tau Beta Pi's Ohio Kappa Chapter, Annette has organized and staffed a free tutoring service for engineering undergraduates at the University of Akron. The recipient of university and state scholarships, she has participated in cooperative education assignments with a major oil refiner and pursued a research project in



sonochemistry. Specializing in the area of reaction engineering, Annette plans to continue toward her doctorate at the University of Kentucky under an NSF fellowship and, later, enter industry to improve processes and develop new techniques. She continues her study of German and French languages and participated in Toastmasters' "lunch time linguists." A member of the university honors program, she was elected to Omicron Delta Kappa, Alpha Lambda Delta, and Phi Eta Sigma and served as a delegate to Tau Beta Pi's national Convention. She is a student member of the AIChE, a participant in the engineers leadership institute workshop, a delegate to the National Engineering Student Council convention and president of the Akron chapter, and a member of women in graduate engineering studies seminar. She enjoys athletics, particularly volleyball, racquetball, aerobics, bowling, and diving.

Ivan M. Nevarez
King Fellow No. 31

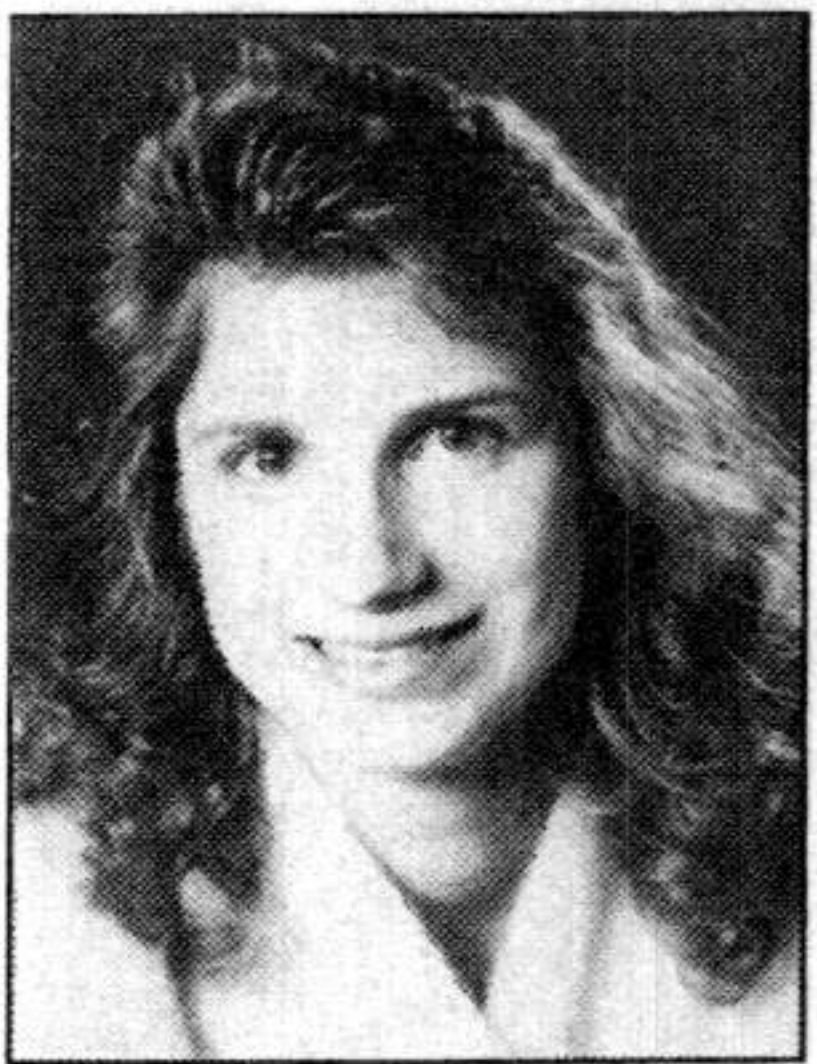
A May graduate of the New Jersey Institute of Technology, Ivan plans to attend Stanford University in the fall to continue his studies in mechanical engineering. Interested in applied mechanics, particularly structural design and dynamics, he hopes to contribute to the rapidly changing aerospace industry. His summer work experiences in



applied research helped him to expand his view of engineering and to prepare himself for graduate school. He has worked as an engineering assistant for IBM, a co-op intern for United Parcel Service research and development, and as a technical associate for AT&T Bell Laboratories. At UPS, he worked with engineers on an automated trailer-loading system, and at AT&T he worked on fabricating a new type of liquid-metal ion source for semiconductor research. His work experiences taught him "to communicate effectively, collaborate with others, and manage resources wisely." On campus, Ivan served as president and vice president of the ASME student chapter, vice president of Phi Eta Sigma, departmental representative to the student senate, and a tutor for Pi Tau Sigma. The recipient of numerous undergraduate scholarships, he has received an NSF fellowship to continue his work toward a doctorate.

Tricia M. Olszewski
3M Fellow No. 29

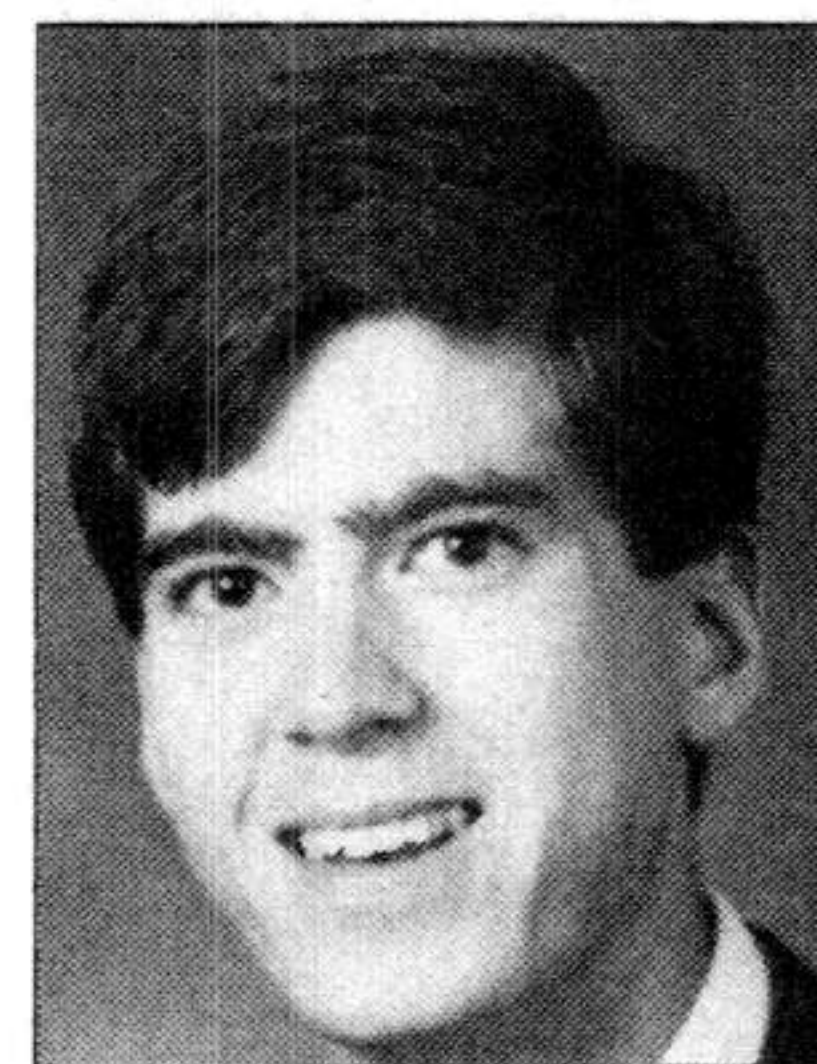
The top engineering student at Oakland University in Rochester, MI, Tricia has served as Tau Beta Pi's Michigan Theta president this past year and led the chapter in 20 activities during the fall semester alone. Double majoring in electrical engineering and systems engineering, she has decided to pursue graduate studies at her *alma*



mater, where she has also received a tuition fellowship. For her academic achievements, she has been recognized with numerous awards as an undergraduate, including engineering scholarships in 1988-92, the Chrysler scholarship in 1990-92, an EDS scholarship, and Honors College scholarships in 1988-91. Merging her understanding of both mechanical and electrical concepts, she plans to become better acquainted with control systems in graduate school, studying areas such as adaptive control and expert systems. Her research experience has incorporated PID control, root-locus design, and state-feedback methods. She enjoys research and plans to gain a firmer grasp of control techniques, especially as they apply to defense systems and automotive automatic suspension and highway systems. Tricia is a member of the student chapters of the ASM, SWE, SAE, and Eta Kappa Nu and participated in her church's community service organization.

Christopher A. Baldwin
Sigma Tau Fellow No. 19

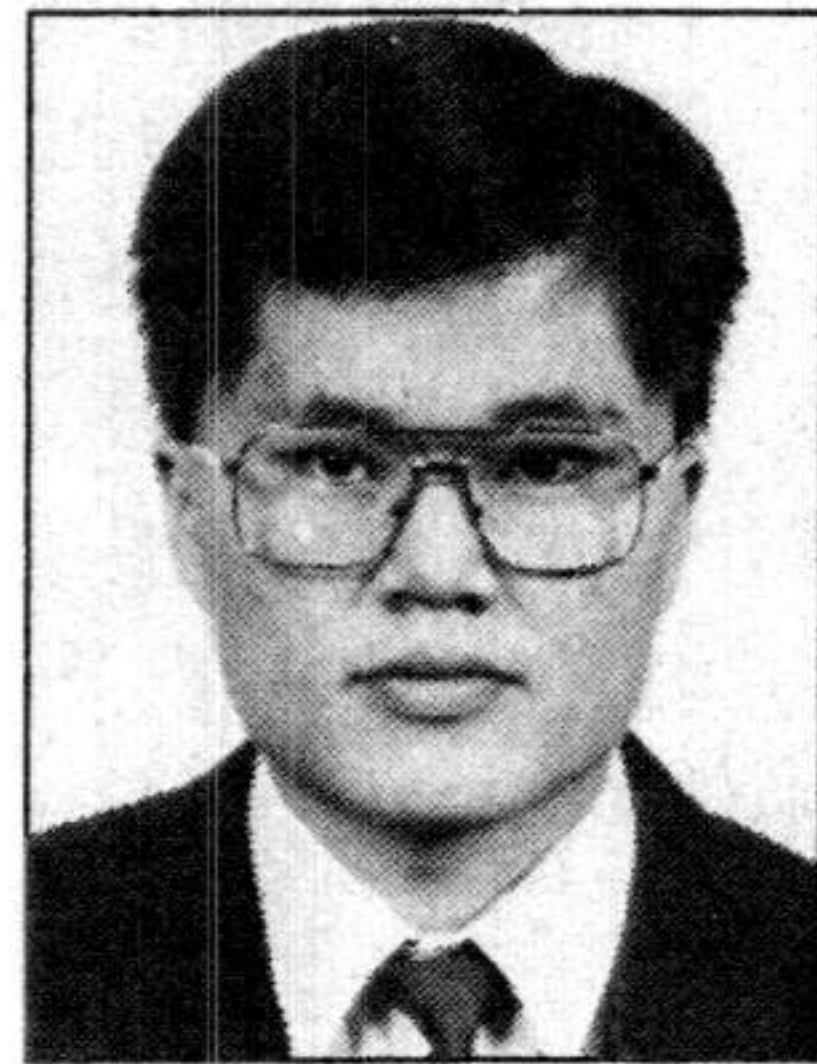
An outstanding chemical engineering graduate of Kansas State University in Manhattan, Chris has been awarded a British Marshall scholarship to attend the University of Cambridge, England, where he will study for his M.S. The recipient of national merit, university, and Barry M. Goldwater congressional scholarships, Chris has



been conducting research on hazardous substances with his major professor for the EPA regional center. His summer work with Dow Chemical, Texas operations, and simultaneous involvement with a grassroots environmental group, revealed the misunderstandings and misconceptions of both groups. To ameliorate the situation, he hopes to someday become a university professor. Active in student affairs, he was a member of the debate team which ranked second in the nation in 1990 and third in 1989, has been captain of the college bowl team since 1989, served as an engineering ambassador, was chemical engineering team captain for the college telefund, and was a Democratic national convention alternate in 1988. He was elected to Phi Kappa Phi and Phi Eta Sigma, was active in the AIChE chapter, and served as president of Omega Chi Epsilon and secretary of Tau Beta Pi's Kansas Gamma Chapter.

Jason Y. Pahng
Stark Fellow No. 15

Jason was vice president of Tau Beta Pi's Illinois Gamma Chapter on the campus of Northwestern University last year. A mechanical engineering major, he was first in his department and will attend MIT this fall to work toward his doctorate. Korean born, he left at age 14 and is now a U.S. citizen. He has studied Japanese and is "especially con-



cerned about industry and technology in Japan and Korea and the implications of both for the United States." He wants to help in technology transfer to U.S. industry and has already had practical experience. His independent research involved building, testing, and improving a voltage-controllable variable pneumatic valve, using electro-rheological fluids. Through the university's honors program, he worked at Argonne, General Motors, and Fermilab. He enjoys working on the frontiers of research, and using a concept developed at Argonne, he designed and constructed a small model Maglev. Jason hopes to be a researcher in industry and has already demonstrated leadership capabilities as president of the ASME student chapter and as a member of student government. He was elected to Pi Tau Sigma and Phi Eta Sigma and is a member of the Korean Scientists and Engineers Association in America.

Stuart William

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